

Abstract

Carbon particles, such as, carbon fibrils and carbon nanotube molecules, may be assembled into substantially pure aligned fibers by a) dispersing the carbon particles within a curable liquid, b) aligning the carbon particles by flowing the mixture of curable liquid and carbon particles down a tapering tube, and c) curing the flowing mixture of curable liquid and carbon particles in the general vicinity of the end of the tapering tube to form a fiber. The curable liquid may be cured using ultraviolet light. The solidified mixture may be further processed by d) heating the fiber so as to cause the volatile elements of the solidified curable liquid portion to substantially dissipate from the fiber, e) twisting the fiber to increase its density, f) heating the fiber to sinter the carbon particles within the fiber, and g) cladding the fiber. The resulting fiber may then be spooled onto a take-up drum.